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Impact of Fishery Agricultural Loans and Co-Operators' Insurance Premium on Economic Growth of Fishery Production Sub-Sector in Nigeria

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Abstract: *The study analyzed the effect of fishery agricultural loans and insurance premium on the economic growth of fishery production sub-sector in Nigeria. It adopted ex-post facto research design, in which data obtained from Nigeria Agricultural Insurance Corporation and Statistical bulletins of Central Bank of Nigeria from 1989-2015 were used for analysis. Descriptive statistics, graphs, ordinary least squares, one sample t-test and co-integration were applied. Regression models were used to test hypotheses. Findings showed that agricultural loans on fishery production have a positive significant effect on economic growth in fishery production with coefficient value of 0.753036, t-value of 8.55006 and p-value of 0.0000. The result of co-integration revealed the presence of co-integration at r=0 which has positive effect on the normalized long run coefficient. Insurance premium on fishery has a positive significant effect with coefficient value of 0.939288, t-value of 11.7996 and p-value of 0.0000. The paper concluded that what the Banks spend in terms of loans and the Nigeria Agricultural Insurance Corporation charges as premium on fishery are significant to the co-operative farmers, as well as to the economic growth of fishery production sub-sector in Nigeria.Co-operative farmers are therefore advised to continue to seek agricultural loans to improve production since their economic well-being is increasingly being sustained, while provision of fish as a protein source is made available, accessible and affordable to Nigerians.*

Keywords: *Fishery, loans, premium, economic growth, Nigeria.*

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I. Introduction

Fishery constitutes an important sector in Nigerian agriculture, providing valuable food and employment to millions and also serving as source of livelihoods mainly for rural dwellers in coastal communities. Fishing is making an important contribution to world protein as it serves as supplement for animal protein especially as cost of affording livestock seems to be beyond the reach of an average income earner (Samson, 2007). Nigeria has a coastline of 3,122km shared by 8 States (Lagos, Ogun, Ondo, Delta, Bayelsa, Rivers, Akwa-Ibom and Cross River) out of a total of 36 states in the country, and this coastal fisheries are important and contribute at least 40 percent of fish production from all sources in Nigeria between 1995 and 2008 (FAO, 2011).

Small scale fisheries provide more than 82 percent of the domestic fish supply, giving livelihoods to one million fishermen and up to 5.8 million fisher folks in the secondary sector comprising processing, preservation, marketing and distribution (FAO, 2011). The total contribution of fisheries to Nigeria's gross domestic product is estimated at about US $1 billion (CBN, 2005). In any case, the demand for fish in Nigeria mostly outstrips the local production. Nigeria is the largest fish consumer in Africa and among the largest fish consumers in the world with over 1.5 million tons of fish consumed annually. (FAO, 2008)

The fishery activities in Nigeria are mainly done by the artisanal sector, the coastal and the brackish water constitutes the major areas of production, followed by the inland rivers and lakes. Aquaculture production and industrial fishing is still at its very low ebb (Ajao, 2006). Consequent upon this, domestic fish supply usually fell short of demand, accounting for a high import of about 50 percent fish consumed in Nigeria. In actual fact, since 1987, there has been a yawning gap between domestic demand of 1.5 million metric tons and domestic supply of 0.5 million metric tons (Anene, Eze andOputa, 2010). Initially, this demand-supply gap was not noticeable when the economy was buoyant as a result of importation of frozen fish. However, the present economic recession and scarcity of foreign exchange to pay for import, has necessitated the need to step-up production through aquaculture. The huge import bill on frozen fish by the Federal Government of Nigeria which amounted to N30 billion ($400m) in year 2002 alone calls for urgent attention in the area of artisanal and

aquaculture. In the same vein, the growing urbanization, improved market integration and the concurrent supply crises from capture fisheries, small and large scale investment are gaining interest in aquaculture production which provides a source of income rather than simple subsistence, and can be incorporated into local agricultural systems to diversify production base (Eze,Anene and Anya, 2008).

But the needed vibrancy and growth in the sector has not been realized due to certain constraints. Easily identifiable here are poor infrastructures, high level of rural poverty (over 80% of rural dwellers live below the poverty line), environmental problems (e.g. pollution in coastal areas arising from gas flaring, oil spills and industrial wastes), civil unrest in the Niger Delta, climate change effects (sea level rise, coastal erosion and flooding, increased environmental temperatures and wind storms) and degradation of coastal areas through human action (Olagunju, Adesiyan and Ezekiel, 2007). Indeed, these may have been responsible for reluctance of investors to move into the sector. But high prices of the various fish species such as cat fish and tilapia and the size of fish consuming population are indicators that fish farming could still be viable and worthwhile investment (Eze, Anene and Anya, 2008). Attempts made to identify constraints affecting the aquaculture subsector in Nigeria revealed the tendency to consider fish farming as a foreign donor-driven technology, characterized by multi-dimensional in-built constraints (FAO, 2011). Similarly, Inoni (2007) noted that these purported constraints were site-specific and that the envisaged solutions to them were deemed to be above the ability and circumstances of the largely small-scale fish farmers who were familiar with artisanal and inland fishing activities in Nigeria.

Nigeria's governments over the years have facilitated agricultural production through the delivery of agricultural loans and agricultural insurance. Governments have interest in agricultural insurance from the perspective of maintaining production for the economy and safeguarding the wellbeing of the rural community. Agricultural insurance is therefore one of the programmes instituted to ensure that co-operative farmers are compensated in event of losses arising from natural disasters. Agricultural loan is the amount of money obtained from the Nigeria's financial institutions such as Bank of Agriculture, Commercial Banks and Microfinance Banks in Nigeria, and this amount is the maximum amount of money which the Nigeria Agricultural Insurance Corporation can indemnify at any loss (NAIC, 1995). Premium is an amount paid periodically to the insurer by the insured for covering a risk.

In an effort to provide agricultural insurance to Nigerian co-operative farmers, the government established the Nigeria Agricultural Insurance Scheme in 1987. This scheme evolved into a corporation fully owned by the Federal Government of Nigeria called the Nigeria Agricultural Insurance Corporation (NAIC) in 1988. The main objectives of NAIC are to promote agricultural production, provide financial support, increase the flow of agricultural credit, and minimize the need for emergency assistance to farmers in times of natural hazards. Economic growth is increase in total value of goods and services produced in a country within a year (measured by GDP).

The objectives of the study were to assess the impact of fishery agricultural loans on economic growth of fishery production sub-sector in Nigeria, and to determine the impact of co-operators' fishery insurance premium on economic growth of fishery production sub-sector in Nigeria.

Hypotheses

i. There is no significant positive relationship between fishery agricultural loans and fishery production sub-sector economic growth in Nigeria;

ii. There is no significant positive relationship between co-operators' fishery insurance premium and fishery production sub-sector economic growth in Nigeria.

. **Conceptual Framework**

Generally, a fishery is an entity engaged in raising or harvesting fish which is determined by some authority to be a fishery. According to the FAO (2005), a fishery is typically defined in terms of the "people involved, species or type of fish, area of water or seabed, method of fishing, class of boats, purpose of the activities or a combination of the foregoing features". The definition often includes a combination of fish and fishers in a region, the latter fishing for similar species with similar gear types.

A fishery may involve the capture of wild fish or raising fish through farming or aquaculture.Directly or indirectly, the livelihood of over 500 million people in developing countries depends on fisheries and aquaculture. Overfishing, including the taking of fish beyond sustainable levels, is reducing fish stocks and employment in many world regions.

The fishery sector is crucial to food security, poverty alleviation and well-being. In 2008 the world consumed 115 million tons of fish and demand is expected to rise, fish and fishery products are vital and affordable source of food and high quality protein (FAO, 2011). They also stated that fish as food reach an all-time high of nearly 17kg per person supply over 3 billion people with at least 15 percent of their annual protein intake. Today fish is the only imported food source that is still primarily gathered from the wild rather than farm

with marine culture. Historically accounting for greater than 80% of the world's fish supply recently, however capture fishery have not been able to keep pace with the growing demand and many marine species have already over fished. Nearly half of the known ocean are completely exploited (FAO, 1999) and 70% are in need of urgent management.

Basically, Fish production in Nigeria is either by capture fisheries, artisanal fish farming or by importation. Capture fisheries involve the harvesting of naturally existing stocks of wild fish. This can be done either by small scale/artisanal fishers or by industrial/commercial trawlers. In artisanal fisheries, production is achieved by individual or by small groups by the use of labour intensive gears. Characteristically artisanal fishers operate from dug out, wooden canoes that are more often than not motorized (Anene, Eze and Oputa, (2010). Artisanal fishing account for more than 80 per cent of the total fish production in Nigeria. According to Kudi, Bako and Atala (2008), 'traditional', 'small-scale' or artisanal fisheries are used to characterize those fisheries that were mainly non-mechanized with low level of production. The term particularly applies to coastal or island ethnic groups using traditional techniques such as rod and tackle, arrows and harpoons, throw nets and drag nets and traditional fishing boats.

II. Theoretical Framework.

The study is anchored on the theory of collaboration. Trust, knowledge sharing and collaboration as developed by Cook and Brown (1999) are central elements of effective interorganizational relationships. These elements are particularly important when the interorganizational relationships involve the development of innovation or new business processes.

Theoretically, collaboration is a recursive process where two or more people or organizations work together in an intersection of common goals - for example, an intellectual endeavor that is creative in nature - by sharing knowledge, learning and building consensus. Most collaboration requires leadership, although the form of leadership can be social within a decentralized and egalitarian group. In particular, teams that work collaboratively can obtain greater resources, recognition and reward when facing competition for finite resources.

Collaboration has of recent time assumed an increasing attention following the advocacy by many for cooperative engagements as means of solving many of global challenges including poverty eradication, growth promotion, and job creation, . The need in society to think and work together on issues of critical concern has increased shifting the emphasis from individual efforts to group work, from independence to community (Kimathi, Ibuathu and Guyo, 2013). In this age of collaboration, the phenomenon is described in a variety of ways: systems, creative problem solving, and inter-organizational relationships involved in information technology (Cook and Brown, 1999).

. A cooperative society as conventionally known is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise (ICA, 1995). Thus, the cooperative organizations, including farmers' cooperatives have all the attribute of collaborative institutions. Therefore our knowledge of cooperatives would be enhanced when examined from the perspectives offered by the theory of collaboration.

Theory of collaboration can be used to predict and influence member behaviors, analyze member perceptions of equity, provide an insight into reasons for cooperative spirit and improve member participation in the cooperative institution, and in particular on why credit (agricultural loans) productive usage and repayment are prioritized by members as well as institutions such as the Central Bank of Nigeria (CBN), the Banks and Nigeria Agricultural Insurance Corporation (NAIC).

III. Methodology

This research adopted the *ex-post facto* research design. Kerlinger (1973) defines *ex-post facto* research as that in which the independent variable or variables have already occurred and in which the researcher starts with observation of a dependent variable or variables. While Onwumere (2005) posits that the *ex-post facto* research design establishes a causal link between them. Based on the nature of this study which is to examine the effect of sum insured and co-operative farmer' contribution on the growth of agricultural gross domestic product in Nigeria which is a cause-effect study as well as the use of data which the researcher cannot manipulate, the *ex-post facto* research design suites this study.

Data were collected from both primary and secondary sources. Primary data was sourced using structured questionnaire administered to respondents across Nigeria, in addition to interviews. Secondary data was collected from the statistical bulletins of the Central Bank of Nigeria on Agricultural GDP and its various components, and from the Nigeria Agricultural Insurance Corporation Headquarters, Abuja, covering the period 1989 to 2015.

Data for the study were analyzed using graphs, descriptive statistics, ordinary least square, panel unit root analysis, one sample t-test and Cointegration. Regression models were used to test hypotheses.

Data Presentation, Analysis and Interpretation

In Table A1, we present the number of polices, volume of risks and premium generation, 1989-2015. See Table A1 under the Appendix section. In 1989, the number of polices covered was 2, 894, in 1990 it was 37, 505, in 1991 it was 26, 306, in 1992 it came down further to 17, 714. In 1993, it rose to 25, 450 and in 1994, it came down to 14, 065. The number of policies varied greatly from one year to another year. With these variations in place, all the agricultural GDP sub-sectors were also affected. The components of agricultural GDP sub-sectors are crop production sub-sector, livestock sub-sector, fishery sub-sector and forestry sub-sector. It should be noted that there were no data on forestry sub-sector from the Central Bank of Nigeria GDP (1989-2015). Therefore, the crop sum insured and premium varied greatly from year to year, as well as the livestock sum insured and premium and fishery sum insured and premium.

In 2010, the number of policies was 32, 239 and in 2011, it was 25, 222. In 2013, 2014 and 2016, the numbers of policies were 26, 662; 40, 933 and 57, 201 respectively. The total number of policies from 1989 to 2015 was 935, 392 being the number of policyholders. This number of policyholders constitutes the population of the study. See also Table A2 under the Appendix section.

Test of Hypothesis 1:

There is no significant positive relationship between fishery agricultural loans(fishery sum insured) and fishery production sub-sector economic growth in Nigeria.

Table 1: Result of Regression model of Fishery GDP on Sum Insured

Dependent Variable: LOG(FISHING_GDP)				
Method: Least Squares (Gauss-Newton / Marquardt steps)				
Date: 03/24/17 Time: 15:01				
Sample: 1989 2015				
Included observations: 27				
LOG(FISHERY_GDP) = C(1) + C(2)*LOG(FISHERY_SUM_INSURED)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1.056441	1.805173	-0.585230	0.5636
C(2)	0.753036	0.088074	8.550066	0.0000
R-squared	0.745167	Mean dependent var		14.31620
Adjusted R-squared	0.734974	S.D. dependent var		1.627550
S.E. of regression	0.837874	Akaike info criterion		2.555288
Sum squared resid	17.55080	Schwarz criterion		2.651276
Log likelihood	-32.49639	Hannan-Quinn criter.		2.583830
F-statistic	73.10363	Durbin-Watson stat		1.959656
Prob(F-statistic)	0.000000			

The result of the least squares regression model obtained in table 1, found R-square value of 74.5% which implies that sum i nsured on fishery production was able to explain about 74.5% of total variation in economic growth in fishery production sub sector in Nigeria which implies a strong adequacy of the model in estimating economic growth in fishing production. It was found that sum insured on fishery production has a positive significant effect on economic growth in fishery production with coefficient value of 0.753036, t-value of 8.55006 and p-value of 0.0000 which falls on the rejection region of the hypothesis assuming 95% confidence level. The model was found to be serial correlation free with a Durbin-Watson value of 1.96.

The obtained model was expressed as

(FISHERY_GDP) = -1. LOG 056441 + 0.753036*LOG(FISHERY_SUM_INSURED)

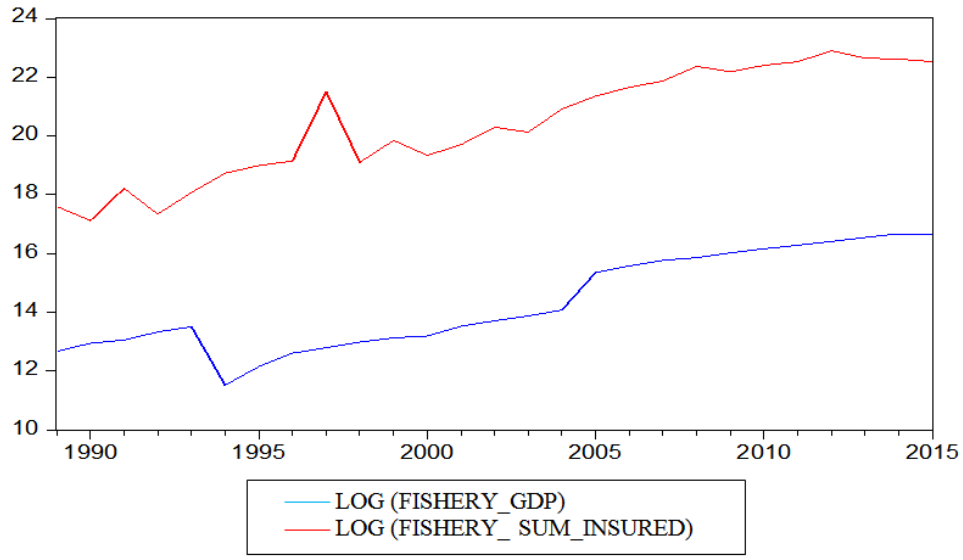

Figure 1: Line Graph of Fishery_GDP andFishery Sum Insured

Co integration Test of Fishery_GDP and Fishery Sum Insured

Table 2: Result of Co-integration TestFishery GDP andFishery Sum Insured

H_O	H_1	Trace Statistic	5% Critical value	Maximum-Eigen value statistic	5% Critical value
$r = 0$	$r = 0$	9.083364	15.49471	8.140566	14.26460
$r \leq 1$	$r = 1$	0.942798	3.841466	0.942798	3.841466

The result of co-integration test obtained in table 14 revealed from the tests for the presence of cointegration at r=0 that the test statistic for both the Trace and Maximum Eigen-value statistics exceeds the 5% level significant (9.08< 15.49), hence we have strong evidence not to reject the null hypothesis of no cointegration. we can conclude that the rank of the matrix r is not greater than 0.

Table 3: Long-run Coefficient of Fishery_GDP and Fishery Sum Insured

This was arrived at by multiplying all the variables by (-1) in order to normalize them.

LOG(FISHERY_GDP)	LOG(FISHERY_SUM_INSURED)
-1.00000	1.035718 (0.17012)

The normalized long run coefficient showed that sum insured on fishery has positive effect on fishing production economic growth at the long run which was validated by result displayed in Figure 5 where Fishing GDP was in an increasing trend.

Test of Hypothesis II:

There is no significant positive relationship between fishery insurance premium (co-operative farmers' contribution) and fishery production sub-sector economic growth in Nigeria.

Table 4: Result of Regression model of Fishery _GDP on Fishery Premium Dependent Variable: LOG(FISHING_GDP)				
Method: Least Squares (Gauss-Newton / Marquardt steps)				
Date: 03/24/17 Time: 15:28				
Sample: 1989 2015				
Included observations: 27				
LOG(FISHERY_GDP) = C(1) + C(2)*LOG(FISHERY_PREMIUM)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1.646158	1.358476	-1.211768	0.2369
C(2)	0.939288	0.079601	11.79996	0.0000

R-squared	0.847783	Mean dependent var		14.31620
Adjusted R-squared	0.841694	S.D. dependent var		1.627550
S.E. of regression	0.647564	Akaike info criterion		2.039989
Sum squared resid	10.48348	Schwarz criterion		2.135977
Log likelihood	-25.53986	Hannan-Quinn criter.		2.068532
F-statistic	139.2391	Durbin-Watson stat		1.713732
Prob(F-statistic)	0.000000			

The result of the least squares regression model obtained in table 4, found R-square value of 84.8% which hat fishery premium was able to explain about 84.7% of total variation in economic growth in fishing production in Nigeria. It was found that co-operative farmers' contribution on fishery has a positive significant effect on economic growth in fishery production with coefficient value of 0.939288, t-value of 11.79996 and p-value of 0.0000 which falls on the rejection region of the hypothesis assuming 95% confidence level. The model was found to be serial correlation free with a Durbin-Watson value of 1.71.

The obtained model was expressed as

LOG(FISHERY_GDP) = -1.646158 + 0.939288*LOG(FISHERY_PREMIUM)

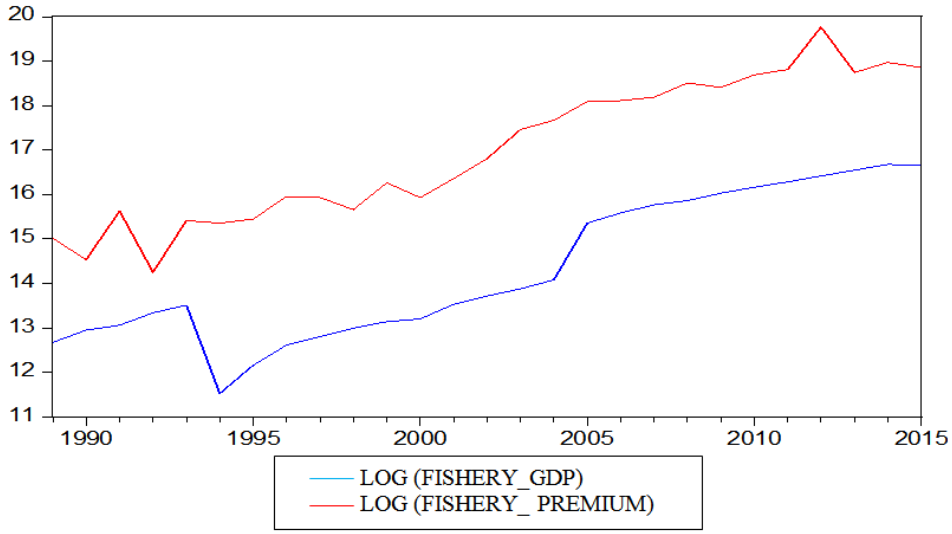

Figure 2: Line Graph of Fishery_GDP and Fishery Premium

Co integration Test of Fishery_GDP and Fishery Premium

Table 5: Result of Co-integration TestFishery_GDP and Fishery Premium

H_O	H_1	Trace Statistic	5% Critical value	Maximum-Eigen value statistic	5% Critical value
$r = 0$	$r = 0$	19.92533**	15.49471	18.87613**	14.26460
$r \leq 1$	$r = 1$	1.049209	3.841466	1.049209	3.841466

The result of co-integration test obtained in table 5 revealed one co integrating equation in both the Trace and Maximum Eigen-value statistics. The outcome implied that there is a high possibility of existence of long-run relationships between fishery GDP and cooperative farmers' contribution on fishery (FisheryInsurance Premium).

IV. Findings and Conclusion

The result of the least squares regression model obtained in table 1, found R-square value of 74.5% which implies that sum insured on fishery production was able to explain about 74.5% of total variation in economic growth in fishery production sub-sector in Nigeria showing a strong adequacy of the model in estimating economic growth in fishery production. It was found that sum insured on fishery production has a positive significant effect on economic growth in fishery production with coefficient value 0.753036, t-value of 8.55006 and p-value of 0.0000 which falls on the rejection region of the hypothesis assuming 95% confidence

level. The model was found to be serial correlation free with a Durbin-Watson value of 1.96. The result of co-integration test revealed the presence of co-integration at r=0 that the test statistics exceed the 5% level significant (9,08<15.49), hence we have strong evidence not to reject the assumption of no co-integration. The normalized long run coefficient showed that sum insured on fishery has positive effect on fishery production economic growth at the long run which was validated by result displayed in Figure 1 where fishery GDP was in an increasing trend.

The result of the least squares regression model of fishery GDP on fishery premium found R-square value of 84.8% which implies that fishery premium was able to explainabout 84.8% of total variation in economic growth in fishery production in Nigeria. It was found that co-operative farmers' contribution on fishery production has a positive significant effect on economic growth in fishery with coefficient value of 0.939288, t-value of 11.79996 and p-value of 0.0000 which falls on the rejection region of the hypothesis assuming 95% confidence level. The result of co-integration test revealed co integrating equation in both the Trace and Maximum Eigen-value statistics. The normalized long run coefficient showed that co-operative farmers' contribution on fishery has positive effect on economic growth on fishery production at the long run which was validated by result displayed in Figure 2 where Fishery GDP has an increasing trend with fishery premium.

It was concluded that fishery sum insured (loans) has positive significant effect on economic growth of fishery in Nigeria, and also co-operative farmers' contribution (insurance premium) has positive significant effect on economic growth of fishery production sub-sector in Nigeria. Co-operative farmers are advised to continue to seek for agricultural loans to improve fishery production since their economic welfare is increasingly being sustained in that direction, while provision of fish as a protein source is being made available, accessible and affordable, especially at this period of economic downturn. Therefore, what the Banks spends in terms of loans and the Nigeria Agricultural Insurance Corporation charges as premium on fishery are significant to the co-operative farmers, as well as to the growth of fishery production sub-sector in Nigeria.

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APPENDICES
NAIC DATA

Table A1: Number of Policies, volume of risks and premium generation, 1988-2015.

NIGERIAN AGRICULTURAL INSURANCE CORPORATION   Page 1   C:\Users\jerome.olowoyeye\Documents\Ytdprem082015.xls

NUMBER OF POLICIES/VOLUME OF RISKS/PREMIUM GENERATION (WITHOUT GOVT. SUBSIDY)(1988 - 2015)

YEAR	CROPS NO OF POLICIES	CROPS SUM INSURED	CROPS PREMIUM	LIVESTOCK NO OF POLICIES	LIVESTOCK SUM INSURED	LIVESTOCK PREMIUM	COMMERCIAL NO OF POLICIES	COMMERCIAL SUM INSURED	COMMERCIAL PREMIUM	TOTAL NO OF POLICIES	TOTAL SUM INSURED	TOTAL PREMIUM
1988	-	-	-	1	1,714,387.00	128,579.00	-	-	-	1	1,714,387.00	128,579.00
1989	2,894	91,687,563.00	6,509,817.00	974	44,192,013.00	3,314,401.00	211	10,867,885.00	380,376.00	4,079	146,747,461.00	10,204,594.00
1990	37,690	159,575,967.00	10,484,141.00	2,310	27,370,080.00	2,052,756.00	67	47,064,543.00	1,647,259.00	40,067	234,010,590.00	14,184,156.00
1991	28,306	244,094,064.00	16,036,980.00	2,159	81,642,693.00	6,123,202.00	390	246,601,000.00	8,631,035.00	30,855	572,337,757.00	30,791,217.00
1992	17,714	130,531,860.00	3,214,421.00	3,463	34,036,000.00	1,546,419.00	1,019	911,328,000.00	23,510,515.00	22,196	1,075,895,860.00	28,271,355.00
1993	25,450	156,485,011.00	2,633,812.00	5,993	71,405,286.00	4,946,209.00	964	750,447,812.00	32,472,801.00	32,407	978,338,109.00	40,052,822.00
1994	14,088	198,636,654.25	4,296,040.00	4,124	137,265,061.07	4,659,648.00	656	1,820,874,980.43	16,402,152.00	18,868	2,156,776,695.75	25,357,840.00
1995	27,841	256,327,096.71	8,836,928.37	6,924	178,391,449.15	5,140,924.46	9,538	1,465,026,437.87	23,762,694.68	44,303	1,899,744,983.73	37,740,547.51
1996	42,377	1,174,797,422.42	21,775,915.67	8,921	206,427,684.97	8,499,512.10	776	1,730,914,444.03	26,690,084.83	52,074	3,112,139,551.42	56,965,512.60
1997	50,215	848,700,865.74	18,265,344.58	7,801	2,187,551,045.05	8,324,312.63	1,916	4,644,887,835.53	36,374,096.92	59,932	7,681,139,746.32	62,963,754.13
1998	34,151	2,218,495,471.59	23,135,747.57	8,862	198,166,994.44	6,315,940.40	2,099	2,638,059,533.90	48,104,610.12	45,112	5,054,721,999.93	77,556,298.09
1999	26,103	1,557,247,252.38	26,506,878.90	6,757	416,844,067.90	11,588,914.04	3,875	3,218,002,298.21	39,560,671.37	36,735	5,192,093,618.49	77,656,464.31
2000	20,373	1,319,843,788.09	26,511,348.17	2,654	250,744,841.16	8,275,655.67	795	2,980,118,826.85	30,806,424.97	23,822	4,550,707,456.10	65,593,428.81
2001	16,717	1,271,755,946.25	30,503,677.09	2,794	362,249,017.12	12,709,460.79	669	2,434,173,523.33	39,661,655.26	20,180	4,068,178,486.70	82,874,793.14
2002	22,419	1,897,197,279.08	40,828,339.78	19,285	653,104,146.74	19,930,689.53	463	3,740,977,598.48	76,906,464.73	42,167	6,291,279,024.30	137,665,494.04
2003	40,821	2,473,386,761.54	69,472,608.72	49,690	555,479,748.99	38,268,804.56	4,948	6,807,069,720.30	141,139,880.09	95,459	9,835,936,230.83	248,881,293.37
2004	98,905	5,766,236,045.17	167,856,524.24	5,612	1,215,546,151.49	47,123,725.41	3,922	19,923,049,964.53	283,319,336.68	108,439	26,904,832,161.19	498,299,586.33
2005	51,704	5,733,886,849.00	189,331,785.00	8,056	1,883,241,405.00	71,844,941.00	5,263	10,790,483,928.00	300,852,626.00	65,023	18,407,612,182.00	562,029,352.00
2006	55,729	20,111,644,710.00	226,602,032.00	8,202	2,542,298,013.00	73,406,380.00	5,148	20,450,727,568.00	255,866,522.00	69,079	43,104,670,291.00	555,874,934.00
2007	39,769	7,147,490,858.50	131,960,430.76	10,126	3,174,922,912.32	79,343,229.04	2,423	14,718,349,314.99	337,677,409.40	52,318	25,040,763,085.81	548,981,069.20
2008	31,881	6,521,997,244.67	130,040,419.43	13,635	5,185,105,361.45	109,388,562.65	2,486	8,917,380,041.08	440,175,114.99	48,002	20,624,482,647.20	679,604,097.07
2009	36,484	8,008,353,350.96	528,278,104.13	13,662	4,303,813,298.67	98,993,845.93	2,847	15,758,565,616.10	200,440,984.49	52,993	28,070,732,265.73	827,712,934.55
2010	32,239	8,228,703,850.10	332,160,320.97	9,656	5,362,461,605.66	131,390,643.02	7,973	48,317,131,808.57	378,625,394.92	49,868	61,908,297,264.33	842,176,358.91
2011	25,222	10,189,788,235.10	175,998,784.84	10,198	6,102,993,258.98	148,035,676.90	4,109	21,433,016,219.93	246,335,531.83	39,529	37,725,797,714.01	570,369,993.57
2012	31,534	12,259,735,518.42	218,093,209.11	19,504	8,825,970,013.21	384,169,587.64	2,789	25,820,790,440.31	337,363,106.29	53,827	46,906,495,971.94	939,625,903.04
2013	26,662	13,189,678,793.75	202,157,173.38	9,314	6,835,672,336.64	138,303,094.47	3,856	51,093,637,801.95	430,886,290.94	39,832	71,118,988,932.34	771,346,558.79
2014	40,903	15,163,925,791.90	399,363,783.87	69,077	6,647,925,657.60	173,172,790.38	2,846	88,205,965,933.04	435,262,759.62	112,826	110,017,817,382.54	1,007,799,333.87
2015	57,201	14,380,994,143.00	263,513,113.38	9,973	6,082,447,910.60	154,367,135.14	3,139	86,801,662,232.02	276,178,549.69	70,313	107,265,104,285.62	694,058,798.21
TOTAL	935,392	140,701,198,393.62	3,274,367,680.96	319,727	63,568,982,440.21	1,751,365,039.76	75,187	445,677,175,307.45	4,469,034,347.82	1,330,306	649,947,356,141.28	9,494,767,068.54

Table A2: Agricultural GDP

Year	Agric. GDP	CROP_GDP	LIVESTOCK_GDP	FISHERY_GDP
1989	6990000	5650000	820000	320000
1990	8460000	6830000	980000	420000
1991	9770000	7990000	1080000	470000
1992	14560000	12060000	1590000	620000
1993	23230000	19590000	2530000	740000
1994	3500000	29660000	3750000	101000
1995	62100000	52690000	6720000	191000
1996	84310000	71290000	9010000	301000
1997	95540000	80680000	10020000	363000
1998	105970000	8910000	10940000	440000
1999	113000000	94710000	11360000	508000
2000	119550000	99890000	1190000	541000
2001	159800000	133640000	1576000	753000
2002	336010000	304780000	18690000	906000
2003	362860000	327280000	20670000	1066000
2004	390890000	347530000	2491000	1303000
2005	140538240	125213040	8780400	4683600
2006	27109800	7860600	11026800	5853600
2007	33849360	10499760	13633200	7074000
2008	27286920	880920	15631200	7758000
2009	35333640	4135680	18464400	9165600
2010	6707160	7235640	21009600	10465200
2011	11185596	7056360	23835600	11815200
2012	21362868	11649960	27216000	13449600
2013	14897304	34758360	31086000	15415200
2014	25527600	2491200	35197200	17521200
2015	706931	618839028	62928900	17141184

Source: CBN Statistical Bulletins, 1989 - 2015

Dr. ChilokwuOkechukwu,. "Impact of Fishery Agricultural Loans and Co-Operators' Insurance Premium on Economic Growth of Fishery Production Sub-Sector in Nigeria." IOSR Journal of Economics and Finance (IOSR-JEF) , vol. 10, no. 1, 2019, pp. 60-68.